

Developing temporary housing solutions for displaced persons – a study of user needs

Ana Slavec and Eva Prelovšek Niemelä
 InnoRenew CoE, Livade 6, 6000-Izola, Slovenia | www.innorenew.eu/

Temporary housing solutions

Temporary housing solutions are needed in civil protection for offering shelter to people in disaster-affected areas and other displaced persons. According to UNHCR, around 79,5 million people were displaced worldwide at the end of 2019. Often, shipping containers are used for shelters, and while some studies highlighted the positive aspects (Zhang and Elmpt, 2014; Hong 2017) and their sustainability (Islam et al., 2016), others have pointed out the need for better and more sustainable solutions (Perruci et al., 2016).

Different types of temporary housing of UNHCR in terms of durability:



UNHCR family tent : 1 year durability; polyester cotton blend and plastic sheeting



UNHCR self-standing family tent: 1 year durability; high density polyethylene (HDPE) fibers, polyester cotton, plastic sheeting



Refuge Housing Unit: 3 years durability; steel frame, polyolefin foam panels, UV stabilized polymer plastic (doors and windows), woven high-density polyethylene fibers (floor)



Transitional shelter: 2-4 years durability; steel structure and sheet metal, aluminum foam insulation



Durable shelter: 10 years durability; brick or concrete tiles, concrete, cement mortar, ceramic tiles or sheet metal (roof), steel beams

Material choice of the shelters is less environmentally friendly for the types with shorter durability. This is problematic since it causes enormous amounts of waste that cannot be recycled. Use of natural and biodegradable materials for the shelter design should be encouraged.

Quotations

Note: For purposes of confidentiality, pseudonyms are used instead of real names.

Q: Did you have any issues in the temporary dwellings you stayed in?

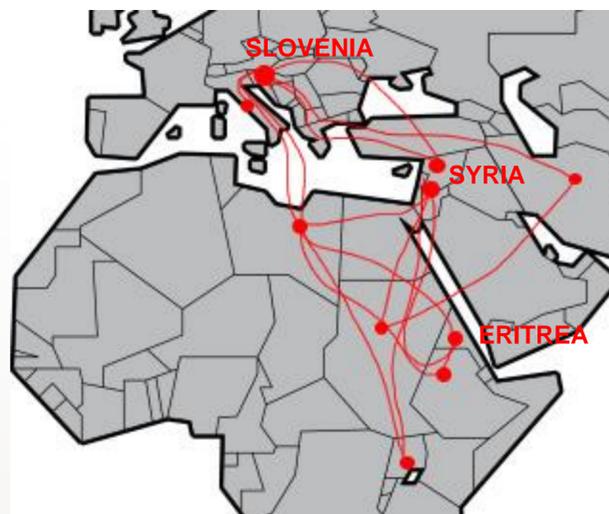
- »Crowded metal containers in Turkey« (Carim, Syrian, Male, Single, No kids)
- »In containers we were missing a closet for clothes and a place to cook and a place for hang clothes, there was also no washing machine« (Fakhir, Syrian, Male, Married with kids)
- »I needed to get used to new things such as stove, electricity, vacuum cleaner« (Hadinet, Eritrean, Female, Single mother)
- »We didn't like the food given to us; we preferred to cook by ourselves« (Kidisti, Eritrean, Female, Married with kids)

Q: Would you be comfortable living in a dwelling like this?

- »I would feel better in wooden houses, especially given climate conditions, also kids would prefer it to living in containers« (Bushra, Syrian, Female, Married with kids)
- »It should be located close to the center of the city, to access offices, schools, supermarkets and other infrastructure« (Hadinet, Eritrean, Female, Single mother)

Study of user needs

- o **Twelve in-depth interviews** with those that received refugee status in Slovenia, six of Syrian (4 male, 2 female) and six of Eritrean (3 male, 3 female) nationality. Interviews took place in November 2018.
- o They were asked to describe their dwellings in their home country, their accommodations on the journey to Slovenia and their current accommodation.



Journey of the interviewees from their hometowns to Slovenia:

- Syria – Turkey – Slovenia
- Syria – Turkey – Greece – Slovenia
- Syria – Lebanon – Egypt – Libya – Italy – Slovenia
- Syria – Sudan – Iran – Turkey – Greece – Balkans – Slovenia
- Eritrea – Sudan – Libya – Italy – Slovenia
- Eritrea – Ethiopia – Sudan – Libya – Italy – Slovenia

- o They were asked for feedback on a draft building plan to develop an adaptable and modifiable modular wooden building that could be used as a temporary dwelling.
- o Dwelling features that the interviewees valued most were having **private bathrooms and kitchens and being settled in cities**, close to necessary infrastructure and integrated with the local population.
- o They did not show strong preferences toward any construction materials, but some of them showed some concerns regarding the use of wood, especially those from Eritrea having less experience with wood as a construction material.

Discussion of results and future work

Study of user needs showed that natural materials are recognized as more desirable in most cases because they form healthier and more pleasant living environments. However, there is some doubt about the durability of such materials, especially wood, which is also a major obstacle to not using it in larger projects for shelter design at UNHCR. Therefore, more investigation should be made into development of durable, lightweight and biodegradable materials for shelter design that would allow easy transportation to areas of displaced people.

Q: What materials would your ideal home use?

- »Large windows because of ventilation, wooden are the best, then aluminum, then iron, fiberglass is also ok« (Adnan, Syrian, Male, Married with kids)
- »For floor ceramics is better than wood because you just pour water and wash it, wood is more difficult to clean« (Bushra, Syrian, Female, Married with kids)
- »Wooden floor because they look nicer and safer for kids« (Fakhir, Syrian, Male, Married with kids)
- »I like wood and would like to have a white wooden board but for floor I prefer ceramics because it is more attractive than wooden« (Hadinet, Eritrean, Female, Single mother)

Q: What do you think about wood as construction material?

- »Better and healthier than other building materials, gives the feeling of being in nature and it is soothing for psychological tension« (Carim, Syrian, Male, Single, No kids)
- »I like it. When I was around ten years old my grandparents lived in a small wooden house in Syria« (Dabir, Syrian, Male, Married without kids)
- »Wood not good for outside because cannot resist water as metallic or cement, sometimes it gest wet, also wood is not strong enough compared to concrete and metals« (Johnathon, Eritrean, Male, Married with kids)
- »Wooden better than metal containers which can't resist heat and cold« (Layne, Eritrean, Male, Single, No kids)



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